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Pixel Newsletter

Editorial Board

- Ms. Manal Elbeshir
- Ms. Manal Salamabi
- Reviewed by Dr. Candice Ridlon

Welcome Our New Faculty

Dr. Zhu joined as a Visiting Assistant Professor in Fall 2010. Dr. Zhu’s main research interests are in diverse backgrounds of Computer Science, Applied Mathematics, and Electronic Engineering. She is particularly interested in building math models to solve problems in the industry, specially 3D computer graphic schemes, image processing, wavelet analysis, and harmonic analysis. Dr. Zhu has more than 10 publications.

Dr. Weiwei Zhu

Dr. Rababaah joined as a Tenure Track Assistant Professor in Fall 2010. Dr. Rababaah’s main research interests are in mobile robotics, unmanned systems, surveillance systems, image and signal processing, machine vision, sensor networks and, multi-sensor multi-modality data fusion. Dr. Rababaah has more than 20 publications in his research areas of interest.

Dr. Aaron Rababaah

Redesigning How We Deliver the Basics

Every undergraduate who begins their studies at UMES starts with basic math, and for 90% that means the foundation Math Courses 101 & 109 sequence. Nearly 1000 students per semester register for these two courses. Unfortunately, close to 65% of them fail both Math 101 and 109 the first time, and 45% must take each course 3 times to pass. This situation is expensive, affects retention and graduation rates, and is demoralizing for everyone involved.

A Math Redesign Department Team comprised of Ms. Elbeshir, Ms. Salamabi, Dr. Ridlon, and Dr. Ukoha was formed in October 2010 to address this problem. Team members learned about the National Center for Academic Transformation (NCAT) models that have successfully reversed similar circumstances. The team spent significant time attending the USM sponsored workshops identifying effective instructional strategies, encouraging other faculty members to participate and provide feedback, submitting proposals for Lumina & Carnegie awards, etc. The team identified strategies to be used to improve the quality of Math 101 & Math 109 instruction with a view to increasing the pass rate while minimizing cost. The team decided to try an experiment using these strategies in two sections each of Math 101 & Math 109 in Spring 2011. Dr. Ukoha received a Lumina award for Math101 that will start from Summer 2011. Dr. Ridlon’s concept paper for Math 109 has also been accepted for funding in Summer 2011.

Strategic Business Partnership Agreement with IBM

Mikey Browne, (STG z/OS Testing), Rich Prewitt (STG Software Testing), Angelo Reid and Jessica Watkins (IT Sales and Marketing) visited UMES campus during Dec 1-Dec 3, 2010. They interviewed our students for possible internships and employment.

Dr. Zhu

Dr. Rababaah

Dr. Weiwei Zhu

Dr. Aaron Rababaah
Faculty Activities

Global Business Conference:
The following papers were accepted/presented at Global Digital Business Association Inc. at New Carrollton, MD Oct 14-16, 2010:


- Weiwei Zhu: Non-uniform Rational B-Splines and its applications.

Gurdeep S Hura served as the chair of Technical Committee of the Global Digital Business Association (GDBA).

Publications:


Workshops:
- Dr. Mark Williams was at the University of Alabama in Tuscaloosa, during the summer of 2010, doing theoretical/computational physics research. A paper is being written concerning that work.

- Dr. Mark Williams attended a workshop titled “Fostering a Campus Culture of Assessment “on January 10 2011”.

- Dr. Candice Ridlon, and Dr. Ojiabo Ukoha attended a NCAT Course Redesign workshop at Orlando, FL, on “Emporium Redesign Model for Math” on February 7-8, 2011.

- Ms. Manal Elbeshir, Dr. Candice Ridlon, Ms. Manal Salamabi and Dr. Ojiabo Ukoha attended two Course Redesign workshops at UMBC, Baltimore on “Introduction to Course Redesign” on Oct 7, 2010 and “Course Redesign Planning Tools” on February15, 2011.

External funds:
  1. STEM Simulation and E-portfolio Center (SSEC) ($387,028)
  2. Integrating GIS and E-Portfolio into STEM Curricula ($384,903)

- Gurdeep S Hura, Coordinator: Title III ($166K) 2010-2011 Enterprise Computing and Service-Oriented Architecture Education Initiative.

- Gurdeep S Hura, Coordinator, Title III ($145K) 2010-2011 Microsoft Center for Students incorporating the IC3Track.

Books/Chapters:

1. Computer Networks: LANs, MANs, WANs, and Wireless

2. Internet Fundamentals and Cyber Security Management
Important Dates for Spring of 2011  January 24—May 20

- **JANUARY 10**: REOPEN OF SPRING 2011 REGISTRATION
- **JANUARY 10**: ADD/DROP PERIODS BEGIN
- **JANUARY 20**: RESIDENCE HALLS OPEN
- **JANUARY 24**: FIRST DAY OF CLASS
- **JANUARY 28**: REGISTRATION AND ADD PERIODS END
- **JANUARY 31**: DROP PERIOD ENDS
- **FEBRUARY 1**: WITHDRAWAL PERIOD BEGINS
- **MARCH 14-18**: MID-TERM EXAMS
- **MARCH 20-27**: SPRING BREAK STUDENTS & THE UNIVERSITY
- **MARCH 29**: MID-TERM GRADES POSTED TO PEOPLESOFT COPY TO DEPARTMENT CHAIR
- **MARCH 16-JULY 31**: APPLICATION FOR DEGREE PROCESS
- **MARCH 29 - APRIL 8**: ACADEMIC ADVISING FOR PRE-REGISTRATION
- **APRIL 11**: COURSE SELECTION (SUMMER/FALL 2011) GRADUATE, SENIORS & ATHLETICS ONLY
- **APRIL 11**: WITHDRAWAL FROM COURSES AND THE UNIVERSITY ENDS
- **APRIL 12**: COURSE SELECTION (SUMMER/FALL 2011) FRESHMEN ONLY
- **APRIL 13**: COURSE SELECTION (SUMMER/FALL 2011) JUNIORS AND SOPHOMORES ONLY
- **APRIL 14-22**: COURSE SELECTION (SUMMER/FALL 2011) ALL STUDENTS
- **APRIL 25 - MAY 13**: STUDENTS EVALUATION OF INSTRUCTOR
- **APRIL 30**: LAST DAY OF SUBMISSION FOR PERMISSION FOR NON-UMES STUDY - FALL & SUMMER SESSIONS
- **MAY 10**: LAST DAY OF CLASS
- **MAY 11**: READING DAY
- **MAY 12-13 & 16-18**: FINAL EXAMS
- **MAY 20**: COMMENCEMENT
- **MAY 20**: GRADES POSTED TO PEOPLESOFT WITH COPY TO DEPT. CHAIR/ COMMENCEMENT
- **MAY 22**: 9-MONTH FACULTY CONTRACTS END

A VERY EARLY TSUNAMI WARNING SYSTEM BY TIR REMOTE SENSING

On Thursday, November 4, 2010 Professor Emeritus Frank Lin gave a colloquium talk at the Department of Math and Computer Science about detecting tsunamis very early in order to be able to issue urgent warnings to the coastal population to evacuate. At present the only method used is the DART method, which has a success rate of only 25%. Many evacuation orders are issued without a tsunami’s actual occurring. At Chulalongkorn University, Bangkok, Thailand, where Dr. Lin has worked since his retirement from UMES, they have discovered a new method to detect a tsunami at its birth by examining the infrared radiation emitted by the erupting tsunami at its epicenter.

Chulalongkorn used the Chinese meteorological satellite FY-2C, which is geostationary above Thailand, to detect the tsunami radiation originating from submarine earthquakes. The accuracy is very high (almost 100% in theory) and is more economical compared to present methods. The proposed system has the following components: Satellite, Receiver, Computer, Visualization, Monitoring, and Alarm

Chulalongkorn has been able to demonstrate the efficiency of the first two steps. They propose to complete this process by supplementing it with the remaining missing steps. They will then construct a separate system for another tsunami-prone region for verification, using possibly another satellite.
Congratulations........ Graduates FALL 2010

Bachelor of Science in Computer Science
1. Hind Abdelrahman
2. Latasia Tyrie Briscoe
3. Michael Jordan Cooper
4. Sha’Nay LaVon Funches
5. Brittany Nicole Stoutamire
6. Delander Collins
7. Andrae Omare Dennis
8. Derek Jamil Powe

Bachelor of Science in Mathematics
1. Kadeen Eccleston
2. Amon Kiprotich
3. Samia Siddig Ahmed
4. Phyllicia Yvette Gibbs
5. Angelique Marie Montogomery

Master of Science (Applied Computer Science)
1. Arjun Cigulla
2. Rakesh Dontula
3. Clayton Dacosta James
4. Sandeep Reddy Pola
5. Kavi Shekar Reddy Alty
6. Vidya Sagar Beetkuri
7. Sri Vamsi Danamudi
8. Sanjosh Reddy Gudipally
9. Venkat Ramesh Paduri
10. Sandhya Police

Master Projects Presentation, December 2010

The following MS projects II were presented during Fall 2010:

- A Novel Approach to Predicting DNA Transcription Factor Binding Site by Clayton James
- Audio Steganography by Kavishekar Alty
- Business Intelligence Network by Sandhya Police
- E-COMMUNITY by Arjun Cigulla
- Effort tracking System by Santosh Reddy Gudipally
- Hospital Management System by Dilish Kumar Reddy Vajrala
- Integrated Manufacturing System by Akhila Vardha
- Network Monitoring System by Sandeep Pola
- OCSC Immigration Portal For Global Market by Vidya Sagar Beetkuri
- Online Auctioning System by Venkat Ramesh Paduri
- Online Examination by Lakshmi Potlapalli
- Online Management System by Srvamsi Dandamudi
- Scheduled Announcement System by Rakesh Dontula
- Securibase by Spoorthy Raj Guram Venkat
- Secure Online Trading by Siva Sumanth Balineni

Students Activities

The following papers were accepted/presented at Global Digital Business Association Inc. (GDBA) at New Carrollton, MD Oct 14-16, 2010:

- **James Clayton**: Predicting DNA Binding Sites
- **Krishnama, Chaitanya R and Gurdeep S Hura**: Monitoring Online Testing Theory Data Visualization
- **Spoorthy Raj Guram Venkat and Gurdeep S Hura**: Securibase.
- **Abdalla Yousif**: Online Course Delivery System (OCDS): a web-based platform
- **Angelique Montgomery, C.K A. Mewes and T Mewes**: Investigation of Spin Transfer torque Magnetic Random Access Memory (STT-MRAM) used in Spintronic Applications.

Angelique Montgomery
The **Department of Mathematics and Computer Science** hosted their fifth “**Math Fun Day**” on November 9, 2010 from 9:00 AM – 12:30 PM. Graduating senior Mathematics majors **Kadeen Eccleston**, **Phyllicia Gibbs**, and **Amon Kiprotich** entertained over 100 fellow UMES students with their lively and interesting hands-on presentations held in three adjacent rooms of the Henson Center. Each workshop was a culmination of the research these students completed as part of their Senior Seminar (Math 490) course taught by Dr. Candice Ridlon.

In Ms. Eccleston’s workshop on the Pythagorean Theorem, students learned how to use the relationships among the sides of right triangles in a variety of daily situations. Many Math 101 and Math 109 students were surprised at the many ways professionals employ this simple theorem to accomplish real-world tasks. Next, Mr. Kiprotich taught students about the mathematics of aerodynamics. After they explored the underlying principles of flight, participants designed their own paper airplanes based on what they learned and competed in an airplane-flying contest for prizes. The excitement was loud and contagious! Finally, Ms. Gibbs showed students the mathematical rules for counting cards in her presentation on the dynamics of gambling. Participants jokingly made plans for future lucrative trips to Las Vegas.

The final event of the day was a colorful animated video on the “Platonic Solids.” After the movie, students folded 12 pentagons from origami paper and made their own dodecahedron to take home as a souvenir of their attendance at Math Fun Day. Once the workshops were complete, the Math Department treated all attendees to a lunch of “pizza pi” and soda.

Student comments included: “I would attend Math Fun Day again because it really was fun!” and “I never realized all the cool things you can do with Math. I thought it was just a bunch of formulas,” and “Wow - I never learned so much math in just a few hours!”
**NEW!**

**New Courses**

**CSDP 388 Introduction to Mobile Robotic Programming**

The Department of Computer Science at UMES is pleased to announce that it has joined the Advancing Robotic Technology for Societal Impact (ARTSI). ARTSI is a collaborative education and research project centered around robotics to promote computer science education through robotics technology. The project is funded by NSF and directed by Carnegie Melon University. As benefits of this project, our department acquired two Create-iRobot robots equipped with two notebooks running robotic programming development environment with linux-ubuntu platform. Drs. G. Hura and A. Rababaah developed and introduced a new class (CSDP 388 Introduction to Mobile Robotic Programming) to teach robotics programming as part of the ARTSI project. Then they formed a robotic team to compete in the upcoming competition in Florida. The team’s name is University of Maryland ARTSI Team for Robotics (UMATR) inspired by “You Matter”. For more information on ARTSI and robotic competition check this link: [http://www.artsialliance.org/](http://www.artsialliance.org/)

**Math 188 Calculus for Students of Natural Sciences Department**

The outcomes for this course is similar to Math 112 (Calculus I) with this primary difference; the examples, homework and examinations have heavy involvement with biological, chemical and physical environments. This course is being taught by Dr. Robert Johnson.

**MEES 644 Multivariate Statistics (online course)**

Graduate Level Courses

Dr. Albert Y. Chi has developed a new course, "Multivariate Statistics" for the Professional Science Masters Degree Program in Quantitative Fisheries & Resource Economics. This is an online course, currently offered and listed as 2011-Hawks, MEES-644, Section 0101-3767. Other courses such as Bayesian Techniques, Biostatistics, and Remote Sensing will be offered in the future semesters.

**CSDP 188 Introduction to Enterprise Systems Testing**

To help address skill challenges in the industry and build an introduction to test curriculum, CSDP 188 Introduction to Enterprise Systems Testing is being introduced as part of IBM Academic Initiative and collaboration between UMES and IBM. The assets of this course are protected under the IBM Academic Initiative program, sponsored by IBM New Hardware and Software Testing curriculum in conjunction with University of Maryland Eastern Shore. CSDP 188 has the potential to significantly reduce the learning curve of new hires in IBM, thereby dramatically increasing the IBM’s training and development return on investment. This course is being taught by Mr. Abuobida Osman.